



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,149	03/12/2004	Peter Andrew Frank	DYOUP0266US	6793
23908	7590	06/19/2006	EXAMINER	
RENNER OTTO BOISSELLE & SKLAR, LLP			WEST, PAUL M	
1621 EUCLID AVENUE			ART UNIT	
NINETEENTH FLOOR			PAPER NUMBER	
CLEVELAND, OH 44115			2856	

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No.	Applicant(s)	
	10/800,149	FRANK, PETER ANDREW	
	Examiner	Art Unit	
	Paul M. West	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8,19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,7,10-17,19 and 21 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 6, 7, 14, 15 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Snelling et al.
2. As to claim 1, Snelling et al. teach a liquid level indicator comprising a plurality of temperature sensors 57,65,67 spaced apart from one another, a processor 70 operable to process the output of the sensors, and an indicator means (display, Fig. 4) for providing an indication of the liquid level in response to an output of the processor, wherein the processor 70 is operable to respond to the difference between outputs of the temperature sensors (Par. 0068, lines 7-14), wherein the processor 70 is operable to respond to at least one of the temperature sensors indicating that the temperature is falling with time (Par. 0077, lines 7-13), wherein the processor 70 is operable to compare the difference between the outputs of the temperature sensors against a pre-set condition (in this case the energy output of the heater is known and a pre-set condition; Par. 0031, lines 10-11).
3. As to claim 2, temperature sensor 65 is spaced above temperature sensor 67 when the indicator is in use.

Art Unit: 2856

4. As to claim 3, the temperature sensors 57,65,67 are thermistors (Par. 0024, lines 10-12).
5. As to claim 4, the processor 70 is operable to process the output of the temperature sensors at pre-set time intervals (Par. 0074, lines 1-4).
6. As to claim 6, the processor is operable to respond to the absolute output of the temperature sensors (Par. 0067, lines 1-5).
7. As to claim 7, the processor 70 includes a memory device for storing at least one output of a temperature sensor taken at a previous time interval, for processing with the most recently obtained output (Par. 0074, lines 1-4). Note that Snelling teaches determining a change in temperature which involves taking one temperature reading, storing it and taking another reading at a later time and then processing the two readings together.
8. As to claim 14, the level indicator includes a housing comprising a main body 30 and a cover 35 attachable to the main body.
9. As to claim 15, the housing includes attachment means (threads on cover 35) for attaching the housing to a container whose liquid level is to be detected.
10. As to claim 21, Snelling et al. teach that the temperature sensors are operative to sense ambient temperature of the container at spaced apart locations, i.e. the heater does not have to be activated for the temperature sensors to function (Par. 0005, lines 8-9).

Claim Rejections - 35 USC § 103

Art Unit: 2856

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelling et al. in view of Reich (DE3632855).

13. As to claims 12 and 13, Snelling et al. teach all of the limitations as set forth above but do not teach an operation indicative means comprising a light emitting device for confirming that the liquid level indicator is operational. Reich teaches an operation indicative means for confirming that a liquid level indicator is operational (Fig. 2; Col. 3, lines 61-63), the operation indicative means comprising one or more light emitting devices (Fig. 2; see Reich's claim 7). It would have been obvious to one of ordinary skill in the art to combine the operation indicative means of Reich with the indicator of Snelling because a because doing so would provide for much more efficient use as it is necessary to know if a device is operational in order to use it.

14. Claims 10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelling et al. in view of Jordan (GB2277592).

15. As to claim 10, Snelling et al. do not teach the indicator means comprising an audible alarm, however Jordan teaches an audible alarm 13 connected to a battery 11 and a water level probe 14. It would have been obvious to one of ordinary skill in the art

Art Unit: 2856

to modify the indicator of Snelling et al. to include an audible alarm since Jordan teaches that this is a well known expediency or alerting users of the liquid level.

16. As to claims 16 and 17, Snelling et al. do not teach the attachment means comprising a magnet, however Jordan teaches the main body of a liquid level indicator being fitted by means of suckers, Velcro, magnets, or screws (see Jordan's claim 5). It would have been obvious to one of ordinary skill in the art to employ a magnetic attaching means with the indicator of Snelling because a magnetic attaching means would allow the apparatus to be quickly placed onto and removed from a container. Jordan does not teach the magnet being a ring magnet, however it would have been obvious to this type of magnet with the apparatus of Snelling because a ring magnet would most suitably fit the geometry of Snelling's indicator.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snelling et al. in view of Jordan, and further in view of Lozano, Jr. (4761638).

18. As to claim 11, the combination of Snelling et al. and Jordan does not teach the audible alarm comprising a piezoelectric sound generator, however Lozano teaches an audible signal device 64, which is a piezoelectric beeper horn that is actuated if there is electrical conducting fluid at a probe 14 or tampering or breakage of the probe. It would have been obvious to one of ordinary skill in the art to use a piezoelectric audible signal device as taught by Lozano because, as Lozano points out, this type of device is readily available from a variety of vendors.

Allowable Subject Matter

19. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
20. Claims 8, 19, and 20 are allowed.

Response to Arguments

In remarks filed 2 June 2006, Applicant has argued that the Snelling reference does not teach comparing the difference of the temperature sensor outputs against a pre-set condition. However, Snelling et al. do teach comparing the difference in temperature sensor outputs to known energy output of a heater. Snelling et al. disclose the heater energy output as being known, and therefore a pre-set condition, and Snelling et al. teach using this known information compared with the measured outputs of the temperature sensors to determine liquid level (Par. 0031).


Applicant has also argued that Snelling et al. do not teach the limitations of new claim 21 which Applicant has said specifies that the temperature sensors measure ambient temperature. However, claim 21 only states that the temperature sensors are operative to measure ambient temperature. Snelling's temperature sensors are certainly operative to measure ambient temperature, i.e. they do not require a heater to operate. Furthermore, Snelling clearly states that a heater **may be** actuated (Par. 0005). This is more than sufficient to show that a heater is not required for the temperature sensors to operate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul M. West whose telephone number is (571) 272-8590. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800